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INAUGURAL

ADDRESS

DELIVERED TO THE

UNIVERSITY OF ST. ANDREWS

FEB. 1ST 1867

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BY

JOHN STUART MILL

RECTOR OF THE UNIVERSITY

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INAUGURAL ADDRESS

Delivered to the University of St. Andrews, Feb. 1st, 1867.

By JOHN STUART MILL, Rector of the University.

IN complying with the custom which prescribes that the person whom you have called by your suffrages to the honorary presidency of your University should embody in an Address a few thoughts on the subjects which most nearly concern a seat of liberal education; let me begin by saying, that this usage appears to me highly commendable. Education, in its larger sense, is one of the most inexhaustible of all topics. Though there is hardly any subject on which so much has been written, by so many of the wisest men, it is as fresh to those who come to it with a fresh mind, a mind not hopelessly filled full with other people's conclusions, as it was to the first explorers of it: and notwithstanding the great mass of excellent things which have been said respecting it, no thoughtful person finds any lack of things both great and small still waiting to be said, or waiting to be developed and followed out to their consequences. Education, moreover, is one of the subjects which most essentially require to be considered by various minds, and from a variety of points of view. For, of all many-sided subjects, it is the one which has the greatest number of sides. Not only does it include whatever we do for ourselves, and whatever is done for us by others, for the express purpose of bringing us somewhat nearer to the perfection of our nature; it does more: in its largest acceptation, it comprehends even the indirect effects produced on character and on the human faculties, by things of which the direct purposes are quite different; by laws, by forms of government, by the industrial arts, by modes of social life; nay even by physical facts not dependent on human will; by climate, soil, and local position. Whatever helps to shape the human being; to make the individual what he is, or hinder him from being what he is not — is part of his education. And a very bad education it often is; requiring all that can be done by cultivated intelligence and will, to counteract its tendencies. To take an obvious instance; the niggardliness of Nature in some places, by engrossing the whole energies of the human being in the mere preservation of life, and her over-bounty in others, affording a sort of brutish subsistence on too easy terms, with hardly any exertion of the human faculties, are both hostile to the spontaneous growth and development of the mind; and it is at those two extremes of the scale that we find human societies in the state of most unmitigated savagery. I shall confine myself, however, to education in the narrower sense; the culture which each generation purposely gives to those who are to be its successors, in order to qualify them for at least keeping up, and if possible for raising, the level of improvement which has been attained. Nearly all here present are daily occupied either in receiving or in giving this sort of education: and the part of it which most concerns you at present is that in which you are yourselves engaged — the stage of education which is the appointed business of a national University.

The proper function of an University in national education is tolerably well understood. At least there is a tolerably general agreement about what an University is not. It is not a place of professional education. Universities are not intended to teach the knowledge required to fit men for some special mode of gaining their livelihood. Their object is not to make skilful lawyers, or physicians, or engineers, but capable and cultivated human beings. It is very right that there should be public facilities for the study of professions. It is well that there should be Schools of Law, and of Medicine, and it would be well if there were schools of engineering, and the industrial arts. The countries which have such institutions are greatly the better for them; and there is something to be said for having them in the same localities, and under the same general superintendence, as the establishments devoted to education properly so called. But these things are no part of what every generation owes to the next, as that on which its civilization and worth will principally depend. They are needed only by a comparatively few, who are under the strongest private inducements to acquire

them by their own efforts; and even those few do not require them until after their education, in the ordinary sense, has been completed. Whether those whose speciality they are, will learn them as a branch of intelligence or as a mere trade, and whether, having learnt them, they will make a wise and conscientious use of them or the reverse, depends less on the manner in which they are taught their profession, than upon what sort of minds they bring to it — what kind of intelligence, and of conscience, the general system of education has developed in them. Men are men before they are lawyers, or physicians, or merchants, or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians. What professional men should carry away with them from an University, is not professional knowledge, but that which should direct the use of their professional knowledge, and bring the light of general culture to illuminate the technicalities of a special pursuit. Men may be competent lawyers without general education, but it depends on general education to make them philosophic lawyers — who demand, and are capable of apprehending, principles, instead of merely cramming their memory with details. And so of all other useful pursuits, mechanical included. Education makes a man a more intelligent shoemaker, if that be his occupation, but not by teaching him how to make shoes; it does so by the mental exercise it gives, and the habits it impresses.

This, then, is what a mathematician would call the higher limit of University education: its province ends where education, ceasing to be general, branches off into departments adapted to the individual's destination in life. The lower limit is more difficult to define. An University is not concerned with elementary instruction: the pupil is supposed to have acquired that before coming here. But where does elementary instruction end, and the higher studies begin? Some have given a very wide extension to the idea of elementary instruction. According to them, it is not the office of an University to give instruction in single branches of knowledge from the commencement. What the pupil should be taught here (they think), is to methodize his knowledge: to look at every separate part of it in its relation to the other parts, and to the whole; combining the partial glimpses which he has obtained of the field of human knowledge at different points, into a general map, if I may so speak, of the entire region; observing how all knowledge is connected, how we ascend to one branch by means of another, how the higher modifies the lower, and the lower helps us to understand the higher; how every existing reality is a compound of many properties, of which each science or distinct mode of study reveals but a small part, but the whole of which must be included to enable us to know it truly as a fact in Nature, and not as a mere abstraction.

This last stage of general education destined to give the pupil a comprehensive and connected view of the things which he has already learnt separately, includes a philosophic study of the Methods of the sciences; the modes in which the human intellect proceeds from the known to the unkown. We must be taught to generalize our conception of the resources which the human mind possesses for the exploration of nature; to understand how man discovers the real facts of the world, and by what tests he can judge whether he has really found them. And doubtless this is the crown and consummation of a liberal education: but before we restrict an University to this highest department of instruction — before we confine it to teaching, not knowledge, but the philosophy of knowledge — we must be assured that the knowledge itself has been acquired elsewhere. Those who take this view of the function of an University are not wrong in thinking that the schools, as distinguished from the universities, ought to be adequate to teaching every branch of general instruction required by youth, so far as it can be studied apart from the rest. But where are such schools to be found? Since science assumed its modern character, nowhere: and in these islands less even than elsewhere. This ancient kingdom, thanks to its great religious reformers, had the inestimable advantage, denied to its southern sister, of excellent parish schools, which

gave, really and not in pretence, a considerable amount of valuable literary instruction to the bulk of the population, two centuries earlier than in any other country. But schools of a still higher description have been, even in Scotland, so few and inadequate, that the Universities have had to perform largely the functions which ought to be performed by schools; receiving students at an early age, and undertaking not only the work for which the schools should have prepared them, but much of the preparation itself. Every Scottish University is not an University only, but a High School, to supply the deficiency of other schools. And if the English Universities do not do the same, it is not because the same need does not exist, but because it is disregarded. Youths come to the Scottish Universities ignorant, and are there taught. The majority of those who come to the English Universities come still more ignorant, and ignorant they go away.

In point of fact, therefore, the office of a Scottish University comprises the whole of a liberal education, from the foundations upwards. And the scheme of your Universities has, almost from the beginning, really aimed at including the whole, both in depth and in breadth. You have not, as the English Universities so long did, confined all the stress of your teaching, all your real effort to teach, within the limits of two subjects, the classical languages and mathematics. You did not wait till the last few years to establish a Natural Science and a Moral Science Tripos. Instruction in both those departments was organized long ago; and your teachers of those subjects have not been nominal professors, who did not lecture: some of the greatest names in physical and in moral science have taught in your Universities and by their teaching contributed to form some of the most distinguished intellects of the last and present centuries. To comment upon the course of edueation at the Scottish Universities is to pass in review every essential department of general culture. The best use, then, which I am able to make of the present occasion, is to offer a few remarks on each of those departments, considered in its relation to human cultivation at large: adverting to the nature of the claims which each has to a place in liberal education; in what special manner they each conduce to the improvement of the individual mind and the benefit of the race; and how they all conspire to the common end, the strengthening, exalting, purifying and beautifying of our common nature, and the fitting out of mankind with the necessary mental implements for the work they have to perform through life.

Let me first say a few words on the great controversy of the present day with regard to the higher education, the difference which most broadly divides educational reformers and conversatives; the vexed question between the ancient languages and the modern sciences and arts; whether general education should be classical — let me use a wider expression, and say literary — or scientific. A dispute as endlessly, and often as fruitlessly agitated as that old controversy which it resembles, made memorable by the names of Swift and Sir William Temple in in England and Fontenelle in France — the contest for superiority between the ancients and the moderns. This question, whether we should be taught the classics or the sciences, seems to me, I confess, very like a dispute whether painters should cultivate drawing or colouring, or, to use a more homely illustration, whether a tailor should make coats or trousers. I can only reply by the question, why not both? Can anything deserve the name of a good education which does not include literature and science too? If there were no more to be said than that scientific education teaches us to think, and literary education to express our thoughts, do we not require both? and is not any one a poor, maimed, lopsided fragment of humanity who is deficient in either? We are not obliged to ask ourselves whether it is more important to know the languages or the sciences. Short as life is, and shorter still as we make it by the time we waste on things which are neither business, nor meditation, nor pleasure, we are not so badly off that our scholars need be ignorant of the laws and properties of the world they live in, or our scientific men destitute of poetic feeling and artistic cultivation. I am amazed at the limited conception which many educational reformers have formed to themselves

of a human being's power of acquisition. The study of science, they truly say, is indispensable: our present education neglects it: there is truth in this too, though it is not all truth: and they think it impossible to find room for the studies which they desire to encourage, but by turning out, at least from general education, those which are now chiefly cultivated. How absurd, they say, that the whole of boyhood should be taken up in acquiring an imperfect knowledge of two dead languages. Absurd indeed: but is the human mind's capacity to to learn, measured by that of Eton and Westminster to teach? I should prefer to see these reformers pointing their attacks against the shameful inefficiency of the schools, public and private, which pretend to teach these two languages and do not. I should like to hear them denounce the wretched methods of teaching, and the criminal idleness and supineness, which waste the entire boyhood of the pupils without really giving to most of them more than a smattering, if even that, of the only kind of knowledge which is even pretended to be cared for. Let us try what conscientious and intelligent teaching can do, before we presume to decide what cannot be done.

Scotland has on the whole, in this respect, been considerably more fortunate than England. Scotch youths have never found it impossible to leave school or the university having learnt somewhat of other things besides Greek and Latin; and why? Because Greek and Latin have been better taught. A beginning of classical instruction has all along been made in the common schools: and the common schools of Scotland, like her Universities, have never been the mere shams that the English Universities were during the last century, and the greater part of the English classical schools still are. The only tolerable Latin Grammars for school purposes that I know of, which had been produced in these islands until very lately, were written by Scotchmen. Reason, indeed, is beginning to find its way by gradual infiltration* even into English schools, and to maintain a contest, though as yet a very unequal one, against routine. A few practical reformers of school tuition, of whom Arnold was the most eminent, have made a beginning of amendment in many things: but reforms, worthy of the name, are always slow, and reform even of governments and churches is not so slow as that of schools, for there is the great preliminary difficulty of fashioning the instruments: of teaching the teachers. If all the improvements in the mode of teaching languages which are already sanctioned by experience, were adopted into our classical schools, we should soon cease to hear of Latin and Greek as studies which must engross the school years, and render impossible any other acquirements. If a boy learnt Greek and Latin on the same principle on which a mere child learns with such ease and rapidity any modern language, namely, by acquiring some familiarity with the vocabulary by practice and repetition, before being troubled with grammatical rules — those rules being acquired with ten fold greater facility when the cases to which they apply are already familiar to the mind; an average schoolboy, long before the age at which schooling terminates, would be able to read fluently and with intelligent interest any ordinary Latin or Greek author in prose or verse, would have a competent knowledge of the grammatical structure of both languages, and have had time besides for an ample amount of scientific instruction. I might go much further; but I am as unwilling to speak out all that I think practicable in this matter, as George Stephenson was about railways, when he calculated the average speed of a train at ten miles an hour, because if he had estimated it higher, the practical men would have turned a deaf ear to him, as that most unsafe character in their estimation, an enthusiast and a visionary. The results have shown, in that case, who was the real practical man. What the results would show in the other case, I will not attempt to anticipate. But I will say confidently, that if the two classical languages were properly taught, there would be no need whatever for ejecting them from the school course, in order to have sufficient time for everything else that need be included therein.

Let me say a few words more on this strangely limited estimate of what it is possible for human beings to learn, resting on

a tacit assumption that they are already as efficiently taught as they ever can be. So narrow a conception not only vitiates our idea of education, but actually, if we receive it, darkens our anticipations as to the future progress of mankind. For if the inexorable conditions of human life make it useless for one man to attempt to know more than one thing, what is to become of the human intellect as facts accumulate? In every generation, and now more rapidly than ever, the things which it is necessary that somebody should know are more and more multiplied. Every department of knowledge becomes so loaded with details, that one who endeavours to know it with minute accuracy, must confine himself to a smaller and smaller portion of the whole extent: every science and art must be cut up into subdivisions, until each man's portion, the district which he thoroughly knows, bears about the same ratio to the whole range of useful knowledge that the art of putting on a pin's head does to the field of human industry. Now, if in order to know that little completely, it is necessary to remain wholly ignorant of all the rest, what will soon be the worth of a man, for any human purpose except his own infinitesimal fraction of human wants and requirements? His state will be even worse than that of simple ignorance. Experience proves that there is no one study or pursuit, which, practised to the exclusion of all others, does not narrow and pervert the mind; breeding in it a class of prejudices special to that pursuit, besides a general prejudice, common to all narrow specialities, against large views, from an incapacity to take in and appreciate the grounds of them. We should have to expect that human nature would be more and more dwarfed, and unfitted for great things, by its very proficiency in small ones. But matters are not so bad with us: there is no ground for so dreary an anticipation. It is not the utmost limit of human acquirement to know only one thing, but to combine a minute knowledge of one or a few things with a general knowledge of many things. By a general knowledge I do not mean a few vague impressions. An eminent man, one of whose writings is part of the course of this University, Archbishop Whately, has well discriminated between a general knowledge and a superficial knowledge. To have a general knowledge of a subject is to know only its leading truths, but to know these not superficially but thoroughly, so as to have a true conception of the subject in its great features; leaving the minor details to those who require them for the purposes of their special pursuit. There is no incompatibility between knowing a wide range of subjects up to this point, and some one subject with the completeness required by those who make it their principal occupation. It is this combination which gives an enlightened public: a body of cultivated intellects, each taught by its attainments in its own province what real knowledge is, and knowing enough of other subjects to be able to discern who are those that know them better. The amount of knowledge is not to be lightly estimated, which qualifies us for judging to whom we may have recourse for more. The elements of the more important studies being widely diffused, those who have reached the higher summits find a public capable of appreciating their superiority, and prepared to follow their lead. It is thus too that minds are formed capable of guiding and improving public opinion on the greater concerns of practical life. Government and civil society, are the most complicated of all subjects accessible to the human mind: and he who would deal competently with them as a thinker, and not as a blind follower of a party, requires not only a general knowledge of the leading facts of life, both moral and material, but an understanding exercised and disciplined in the principles and rules of sound thinking, up to a point which neither the experience of life, nor any one science or branch of knowledge, affords. Let us understand, then, that it should be our aim in learning, not merely to know the one thing which is to be our principal occupation, as well as it can be known, but to do this and also to know something of all the great subjects of human interest; taking care to know that something accurately, marking well the dividing line between what we know accurately and what we do not: and remembering that our object should be to obtain a true view of nature

and life in their broad outline, and that it is idle to throw away time upon the details of anything which is to form no part of the occupation of our practical energies.

It by no means follows, however, that every useful branch of general, as distinct from professional, knowledge, should be included in the curriculum of school or university studies. There are things which are better learnt out of school, or when the school years, and even those usually passed in a Scottish university, are over. I do not agree with those reformers who would give a regular and prominent place in the school or university course to modern languages. This is not because I attach small importance to the knowledge of them. No one can in our age be esteemed a well-instructed person who is not familiar with at least the French language, so as to read French books with ease; and there is great use in cultivating a familiarity with German. But living languages are so much more easily acquired by intercourse with those who use them in daily life; a few months in the country itself, if properly employed, go so much farther than as many years of school lessons; that it is really waste of time for those to whom that easier mode is attainable, to labour at them with no help but that of books and masters; and it will in time be made attainable, through international schools and colleges, to many more than at present. Universities do enough to facilitate the study of modern languages, if they give a mastery over that ancient language which is the foundation of most of them, and the possession of which makes it easier to learn four or five of the continental languages than it is to learn one of them without it. Again, it has always seemed to me a great absurdity that history and geography should be taught in schools; except in elementary schools for the children of the labouring classes, whose subsequent access to books is limited. Who ever really learnt history and geography except by private reading? and what an utter failure a system of education must be, if it has not given the pupil a sufficient taste for reading to seek for himself those most attractive and easily intelligible of all kinds of knowledge? Besides, such history and geography as can be taught in schools exercise none of the faculties of the intelligence except the memory. An University is indeed the place where the student should be introduced to the Philosophy of History; where Professors who not merely know the facts but have exercised their minds on them, should initiate him into the causes and explanation, so far as within our reach, of the past life of mankind in its principal features. Historical criticism also — the tests of historical truth — are a subject to which his attention may well be drawn in this stage of his education. But of the mere facts of history, as commonly accepted, what educated youth of any mental activity does not learn as much as is necessary, if he is simply turned loose into an historical library? What he needs on this, and on most other matters of common information, is not that he should be taught in boyhood, but that abundance of books should be accessible to him.

The only languages, then, and the only literature, to which I would allow a place in the ordinary curriculum, are those of the Greeks and Romans; and to these I would preserve the position in it which they at present occupy. That position is justified, by the great value, in education, of knowing well some other cultivated language and literature than one's own, and by the peculiar value of those particular languages and literatures.

There is one purely intellectual benefit from a knowledge of languages, which I am specially desirous to dwell on. Those who have seriously reflected on the causes of human error, have been deeply impressed with the tendency of mankind to mistake words for things. Without entering into the metaphysics of the subject, we know how common it is to use words glibly and with apparent propriety, and to accept them confidently when used by others, without ever having had any distinct conception of the things denoted by them. To quote again from Archbishop Whately, it is the habit of mankind to mistake familiarity for accurate knowledge. As we seldom think of asking the meaning of what we see every day, so when our ears are used to the sound of a word or a phrase, we do not

suspect that it conveys no clear idea to our minds, and that we should have the utmost difficulty in defining it, or expressing, in any other words, what we think we understand by it. Now it is obvious in what manner this bad habit tends to be corrected by the practice of translating with accuracy from one language to another, and hunting out the meanings expressed in a vocabulary with which we have not grown familiar by early and constant use. I hardly know any greater proof of the extraordinary genius of the Greeks, than that they were able to make such brilliant achievements in abstract thought, knowing, as they generally did, no language but their own. But the Greeks did not escape the effects of this deficiency. Their greatest intellects, those who laid the foundation of philosophy and of all our intellectual culture, Plato and Aristotle, are continually led away by words; mistaking the accidents of language for real relations in nature, and supposing that things which have the same name in the Greek tongue must be the same in their own essence. There is a well known saying of Hobbes, the far-reaching significance of which you will more and more appreciate in proportion to the growth of your own intellect: "Words are the counters of wise men, but the money of fools." With the wise man a word stands for the fact which it represents; to the fool it is itself the fact. To carry on Hobbes' metaphor, the counter is far more likely to be taken for merely what it is, by those who are in the habit of using many different kinds of counters. But besides the advantage of possessing another cultivated language, there is a further consideration equally important. Without knowing the language of a people, we never really know their thoughts, their feelings, and their type of character: and unless we do possess this knowledge, of some other people than ourselves, we remain, to the hour of our death, with our intellects only half expanded. Look at a youth who has never been out of his family circle: he never dreams of any other opinions or ways of thinking than those he has been bred up in; or, if he has heard of any such, attributes them to some moral defect, or inferiority of nature or education. If his family are Tory, he cannot conceive the possibility of being a Liberal; if Liberal, of being a Tory. What the notions and habits of a single family are to a boy who has had no intercourse beyond it, the notions and habits of his own country are to him who is ignorant of every other. Those notions and habits are to him human nature itself; whatever varies from them is an unaccountable aberration which he cannot mentally realize: the idea that any other ways can be right, or as near an approach to right as some of his own, is inconceivable to him. This does not merely close his eyes to the many things which every country still has to learn from others: it hinders every country from reaching the improvement which it could otherwise attain by itself. We are not likely to correct any of our opinions or mend any of our ways, unless we begin by conceiving that they are capable of amendment: but merely to know that foreigners think differently from ourselves, without understanding why they do so, or what they really do think, does but confirm us in our self-conceit, and connect our national vanity with the preservation of our own peculiarities. Improvement consists in bringing our opinions into nearer agreement with facts; and we shall not be likely to do this while we look at facts only through glasses coloured by those very opinions. But since we cannot divest ourselves of preconceived notions, there is no known means of eliminating their influence but by frequently using the differently coloured glasses of other people: and those of other nations, as the most different, are the best.

But if it is so useful, on this account, to know the language and literature of any other cultivated and civilized people, the most valuable of all to us in this respect are the languages and literature of the ancients. No nations of modern and civilized Europe are so unlike one another, as the Greeks and Roman are unlike all of us; yet without being, as some remote Orientals are, so totally dissimilar, that the labour of a life is required to enable us to understand them. Were this the only gain to be derived from a knowledge of the ancients, it would already place the study of them in

a high rank among enlightening and liberalizing pursuits. It is of no use saying that we may know them through modern writings. We may know something of them in that way; which is much better than knowing nothing. But modern books do not teach us ancient thought; they teach us some modern writer's notion of ancient thought. Modern books do not show us the Greeks and Romans, they tell us some modern writer's opinions about the Greeks and Romans. Translations are scarcely better. When we want really to know what a person thinks or says, we seek it at first hand from himself. We do not trust to another person's impression of his meaning, given in another person's words; we refer to his own. Much more is it necessary to do so when his words are in one language, and those of his reporter in another. Modern phraseology never conveys the exact meaning of a Greek writer; it cannot do so, except by a diffuse explanatory circumlocution which no translator dares use. We must be able, in a certain degree, to think in Greek, if we would represent to ourselves how a Greek thought: and this not only in the abstruse region of metaphysics, but about the political, religious, and even domestic concerns of life. I will mention a further aspect of this question, which, though I have not the merit of originating it, I do not remember to have seen noticed in any book. There is no part of our knowledge which it is more useful to obtain at first hand — to go to the fountain head for — than our knowledge of history. Yet this, in most cases, we hardly ever do. Our conception of the past is not drawn from its own records, but from books written about it, containing not the facts, but a view of the facts which has shaped itself in the mind of somebody of our own or a very recent time. Such books are very instructive and valuable; they help us to understand history, to interpret history, to draw just conclusions from it; at the worst, they set us the example of trying to do all this; but they are not themselves history. The knowledge they give is upon trust, and even when they have done their best, it is not only incomplete but partial, because confined to what a few modern writers have seen in the materials, and have thought worth picking out from among them. How little we learn of our own ancestors from Hume, or Hallam, or Macaulay, compared with what we know if we add to what these tell us, even a little reading of cotemporary authors and documents! The most recent historians are so well aware of this, that they fill their pages with extracts from the original materials, feeling that these extracts are the real history, and their comments and thread of narrative are only helps towards understanding it. Now it is part of the great worth to us of our Greek and Latin studies, that in them we do read history in the original sources. We are in actual contact with cotemporary minds; we are not dependent on hearsay; we have something by which we can test and check the representations and theories of modern historians. It may be asked, why then not study the original materials of modern history? I answer, it is highly desirable to do so; and let me remark by the way, that even this requires a dead language; nearly all the documents prior to the Reformation, and many subsequent to it, being written in Latin. But the exploration of these documents, though a most useful pursuit, cannot be a branch of education. Not to speak of their vast extent, and the fragmentary nature of each, the strongest reason is, that in learning the spirit of our own past ages, until a comparatively recent period, from cotemporary writers, we learn hardly anything else. Those authors, with a few exceptions, are little worth reading on their own account. While, in studying the great writers of antiquity, we are not only learning to understand the ancient mind, but laying in a stock of wise thought and observation, still valuable to ourselves; and at the same time making ourselves familiar with a number of the most perfect and finished literary compositions which the human mind has produced — compositions which, from the altered conditions of human life, are likely to be seldom paralleled, in their sustained excellence, by the times to come.

Even as mere languages, no modern European language is so valuable a discipline to the intellect as those of Greece and

Rome, on account of their regular and complicated structure. Consider for a moment what grammar is. It is the most elementary part of logic. It is the beginning of the analysis of the thinking process. The principles and rules of grammar are the means by which the forms of language are made to correspond with the universal forms of thought. The distinctions between the various parts of speech, between the cases of nouns, the moods and tenses of verbs, the functions of particles, are distinctions in thought, not merely in words. Single nouns and verbs express objects and events, many of which can be cognized by the senses: but the modes of putting nouns and verbs together, express the relations of objects and events, which can be cognized only by the intellect; and each different mode corresponds to a different relation. The structure of every sentence is a lesson in logic. The various rules of syntax oblige us to distinguish between the subject and predicate of a proposition, between the agent, the action, and the thing acted upon; to mark when an idea is intended to modify or qualify, or merely to unite with, some other idea; what assertions are categorical, what only conditional; whether the intention is to express similarity or contrast, to make a plurality of assertions conjunctively or disjunctively; what portions of a sentence, though grammatically complete within themselves, are mere members or subordinate parts of the assertion made by the entire sentence. Such things form the subject-matter of universal grammar; and the languages which teach it best are those which have the most definite rules, and which provide distinct forms for the greatest number of distinctions in thought, so that if we fail to attend precisely and accurately to any of these, we cannot avoid committing a solecism in language. In these qualities the classical languages have an incomparable superiority over every modern language, and over all languages, dead or living, which have a literature worth being generally studied.

But the superiority of the literature itself, for purposes of education, is still more marked and decisive. Even in the substantial value of the matter of which it is the vehicle, it is very far from having been superseded. The discoveries of the ancients in science have been greatly surpassed, and as much of them as is still valuable loses nothing by being incorporated in modern treatises: but what does not so well admit of being transferred bodily, and has been very imperfectly carried off even piecemeal, is the treasure which they accumulated of what may be called the wisdom of life: the rich store of experience of human nature and conduct, which the acute and observing minds of those ages, aided in their observations by the greater simplicity of manners and life, consigned to their writings, and most of which retains all its value. The speeches in Thucydides; the Rhetoric, Ethics, and Politics of Aristotle; the Dialogues of Plato; the Orations of Demosthenes; the Satires, and especially the Epistles of Horace; all the writings of Tacitus; the great work of Quintilian, a repertory of the best thoughts of the ancient world on all subjects connected with education; and, in a less formal manner, all that is left to us of the ancient historians, orators, philosophers, and even dramatists, are replete with remarks and maxims of singular good sense and penetration, applicable both to political and to private life: and the actual truths we find in them are even surpassed in value by the encouragement and help they give us in the pursuit of truth. Human invention has never produced anything so valuable, in the way both of stimulation and of discipline to the inquiring intellect, as the dialectics of the ancients, of which many of the works of Aristotle illustrate the theory, and those of Plato exhibit the practice. No modern writing comes near to these, in teaching, both by precept and example, the way to investigate truth, on those subjects, so vastly important to us, which remain matters of controversy, from the difficulty or impossibility of bringing them to a directly experimental test. To question all things; never to turn away from any difficulty; to accept no doctrine either from ourselves or from other people without a rigid scrutiny by negative criticism, letting no fallacy, or incoherence, or confusion of thought, slip by unperceived; above all, to

insist upon having the meaning of a word clearly understood before using it, and the meaning of a proposition before assenting to it; these are the lessons we learn from the ancient dialecticians. With all this vigorous management of the negative element, they inspire no scepticism about the reality of truth, or indifference to its pursuit. The noblest enthusiasm, both for the search after truth and for applying it to its highest uses, pervades these writers, Aristotle no less than Plato, though Plato has incomparably the greater power of imparting those feelings to others. In cultivating, therefore, the ancient languages as our best literary education, we are all the while laying an admirable foundation for ethical and philosophical culture. In purely literary excellence — in perfection of form — the pre-eminence of the ancients is not disputed. In every department which they attempted, and they attempted almost all, their composition, like their sculpture, has been to the greatest modern artists an example, to be looked up to with hopeless admiration, but of inappreciable value as a light on high, guiding their own endeavour. In prose and in poetry, in epic, lyric, or dramatic, as in historical, philosophical, and oratorical art, the pinnacle on which they stand is equally eminent. I am now speaking of the form, the artistic perfection of treatment: for, as regards substance, I consider modern poetry to be superior to ancient, in the same manner, though in a less degree, as modern science: it enters deeper into nature. The feelings of the modern mind are more various, more complex and manifold, than those of the ancients ever were. The modern mind is, what the ancient mind was not, brooding and self-conscious; and its meditative self-consciousness has discovered depths in the human soul which the Greeks and Romans did not dream of, and would not have understood. But what they had got to express, they expressed in a manner which few even of the greatest moderns have seriously attempted to rival. It must be remembered that they had more time, and that they wrote chiefly for a select class, possessed of leisure. To us who write in a hurry for people who read in a hurry, the attempt to give an equal degree of finish would be loss of time. But to be familiar with perfect models is not the less important to us because the element in which we work precludes even the effort to equal them. They show us at least what excellence is, and make us desire it, and strive to get as near to it as is within our reach. And this is the value to us of the ancient writers, all the more emphatically, because their excellence does not admit of being copied, or directly imitated. It does not consist in a trick which can be learnt, but in the perfect adaptation of means to ends. The secret of the style of the great Greek and Roman authors, is that it is the perfection of good sense. In the first place, they never use a word without a meaning, or a word which adds nothing to the meaning. They always (to begin with) had a meaning; they knew what they wanted to say; and their whole purpose was to say it with the highest degree of exactness and completeness, and bring it home to the mind with the greatest possible clearness and vividness. It never entered into their thoughts to conceive of a piece of writing as beautiful in itself, abstractedly from what it had to express: its beauty must all be subservient to the most perfect expression of the sense. The *curiosa felicitas* which their critics ascribed in a pre-eminent degree to Horace, expresses the standard at which they all aimed. Their style is exactly described by Swift's definition, "the right words in the right places." Look at an oration of Demosthenes; there is nothing in it which calls attention to itself as style at all: it is only after a close examination we perceive that every word is what it should be, and where it should be, to lead the hearer smoothly and imperceptibly into the state of mind which the orator wishes to produce. The perfection of the workmanship is only visible in the total absence of any blemish or fault, and of anything which checks the flow of thought and feeling, anything which even momentarily distracts the mind from the main purpose. But then (as has been well said) it was not the object of Demosthenes to make the Athenians cry out "What a splendid speaker!" but to make them say "Let us march against Philip!"

It was only in the decline of ancient literature that ornament began to be cultivated merely as ornament. In the time of its maturity, not the merest epithet was put in because it was thought beautiful in itself; nor even for a merely descriptive purpose, for epithets purely descriptive were one of the corruptions of style which abound in Lucan, for example: the word had no business there unless it brought out some feature which was wanted, and helped to place the object in the light which the purpose of the composition required. These conditions being complied with, then indeed the intrinsic beauty of the means used was a source of additional effect, of which it behoved them to avail themselves, like rhythm and melody of versification. But these great writers knew that ornament for the sake of ornament, ornament which attracts attention to itself, and shines by its own beauties, only does so by calling off the mind from the main object, and thus not only interferes with the higher purpose of human discourse, which ought, and generally professes, to have some matter to communicate, apart from the mere excitement of the moment, but also spoils the perfection of the composition as a piece of fine art, by destroying the unity of effect. This, then, is the first great lesson in composition to be learnt from the classical authors. The second is, not to be prolix. In a single paragraph, Thucydides can give a clear and vivid representation of a battle, such as a reader who has once taken it into his mind can seldom forget. The most powerful and affecting piece of narrative perhaps in all historical literature, is the account of the Sicilian catastrophe in his seventh book, yet how few pages does it fill! The ancients were concise, because of the extreme pains they took with their compositions; almost all moderns are prolix, because they do not. The great ancients could express a thought so perfectly in a few words or sentences, that they did not need to add any more: the moderns, because they cannot bring it out clearly and completely at once, return again and again, heaping sentence upon sentence, each adding a little more elucidation, in hopes that though no single sentence expresses the full meaning, the whole together may give a sufficient notion of it. In this respect I am afraid we are growing worse instead of better, for want of time and patience, and from the necessity we are in of addressing almost all writings to a busy and imperfectly prepared public. The demands of modern life are such — the work to be done, the mass to be worked upon, are so vast, that those who have anything particular to say — who have, as the phrase goes, any message to deliver — cannot afford to devote their time to the production of masterpieces. But they would do far worse than they do, if there had never been masterpieces, or if they had never known them. Early familiarity with the perfect, makes our most imperfect production far less bad than it otherwise would be. To have a high standard of excellence often makes the whole difference of rendering our work good when it would otherwise be mediocre.

For all these reasons I think it important to retain these two languages and literatures in the place they occupy, as a part of liberal education, that is, of the education of all who are not obliged by their circumstances to discontinue their scholastic studies at a very early age. But the same reasons which vindicate the place of classical studies in general education, show also the proper limitation of them. They should be carried as far as is sufficient to enable the pupil, in after life, to read the great works of ancient literature with ease. Those who have leisure and inclination to make scholarship, or ancient history, or general philology, their pursuit, of course require much more, but there is no room for more in general education. The laborious idleness in which the school-time is wasted away in the English classical schools deserves the severest reprehension. To what purpose should the most precious years of early life be irreparably squandered in learning to write bad Latin and Greek verses? I do not see that we are much the better even for those who end by writing good ones. I am often tempted to ask the favourites of nature and fortune, whether all the serious and important work of the world is done, that their time and energy

can be spared for these *nugæ difficiles*? I am not blind to the utility of composing in a language, as a means of learning it accurately. I hardly know any other means equally effectual. But why should not prose composition suffice? What need is there of original composition at all? if that can be called original which unfortunate schoolboys, without any thoughts to express, hammer out on compulsion from mere memory, acquiring the pernicious habit which a teacher should consider it one of his first duties to repress, that of merely stringing together borrowed phrases? The exercise in composition, most suitable to the requirements of learners, is that most valuable one, of retranslating from translated passages of a good author: and to this might be added, what still exists in many Continental places of education, occasional practice in talking Latin. There would be something to be said for the time spent in the manufacture of verses, if such practice were necessary for the enjoyment of ancient poetry; though it would be better to lose that enjoyment than to purchase it at so extravagant a price. But the beauties of a great poet would be a far poorer thing than they are, if they only impressed us through a knowledge of the technicalities of his art. The poet needed those technicalities: they are not necessary to us. They are essential for criticising a poem, but not for enjoying it. All that is wanted is sufficient familiarity with the language, for its meaning to reach us without any sense of effort, and clothed with the associations on which the poet counted for producing his effect. Whoever has this familiarity, and a practised ear, can have as keen a relish of the music of Virgil and Horace, as of Gray, or Burns, or Shelley, though he know not the metrical rules of a common Sapphic or Alcaic. I do not say that these rules ought not to be taught, but I would have a class apart for them, and would make the appropriate exercises an optional, not a compulsory part of the school teaching.

Much more might be said respecting classical instruction, and literary cultivation in general, as a part of liberal education. But it is time to speak of the uses of scientific instruction: or rather its indispensable necessity, for it is recommended by every consideration which pleads for any high order of intellectual education at all.

The most obvious part of the value of scientific instruction, the mere information that it gives, speaks for itself. We are born into a world which we have not made; a world whose phenomena take place according to fixed laws, of which we do not bring any knowledge into the world with us. In such a world we are appointed to live, and in it all our work is to be done. Our whole working power depends on knowing the laws of the world — in other words, the properties of the things which we have to work with, and to work among, and to work upon. We may and do rely, for the greater part of this knowledge, on the few who in each department make its acquisition their main business in life. But unless an elementary knowledge of scientific truths is diffused among the public, they never know what is certain and what is not, or who are entitled to speak with authority and who are not: and they either have no faith at all in the testimony of science, or are the ready dupes of charlatans and impostors. They alternate between ignorant distrust, and blind, often misplaced, confidence. Besides, who is there who would not wish to understand the meaning of the common physical facts that take place under his eye? Who would not wish to know why a pump raises water, why a lever moves heavy weights, why it is hot at the tropics and cold at the poles, why the moon is sometimes dark and sometimes bright, what is the cause of the tides? Do we not feel that he who is totally ignorant of these things, let him be ever so skilled in a special profession, is not an educated man but an ignoramus? It is surely no small part of education to put us in intelligent possession of the most important and most universally interesting facts of the universe, so that the world which surrounds us may not be a sealed book to us, uninteresting because unintelligible. This, however, is but the simplest and most obvious part of the utility of science, and the part which, if neglected in youth, may be the most easily made up for afterwards. It is more important to understand the value of scientific

instruction as a training and disciplining process, to fit the intellect for the proper work of a human being. Facts are the materials of our knowledge, but the mind itself is the instrument: and it is easier to acquire facts, than to judge what they prove, and how, through the facts which we know, to get to those which we want to know.

The most incessant occupation of the human intellect throughout life is the ascertainment of truth. We are always needing to know what is actually true about something or other. It is not given to us all to discover great general truths that are a light to all men and to future generations; though with a better general education the number of those who could do so would be far greater than it is. But we all require the ability to judge between the conflicting opinions which are offered to us as vital truths; to choose what doctrines we will receive in the matter of religion, for example; to judge whether we ought to be Tories, Whigs, or Radicals, or to what length it is our duty to go with each; to form a rational conviction on great questions of legislation and internal policy, and on the manner in which our country should behave to dependencies and to foreign nations. And the need we have of knowing how to discriminate truth, is not confined to the larger truths. All through life it is our most pressing interest to find out the truth about all the matters we are concerned with. If we are farmers we want to find what will truly improve our soil; if merchants, what will truly influence the markets of our commodities; if judges, or jurymen, or advocates, who it was that truly did an unlawful act, or to whom a disputed right truly belongs. Every time we have to make a new resolution or alter an old one, in any situation in life, we shall go wrong unless we know the truth about the facts on which our resolution depends. Now, however different these searches for truth may look, and however unlike they really are in their subject-matter, the methods of getting at truth, and the tests of truth, are in all cases much the same. There are but two roads by which truth can be discovered; observation, and reasoning: observation, of course, including experiment. We all observe, and we all reason, and therefore more or less successfully, we all ascertain truths: but most of us do it very ill, and could not get on at all were we not able to fall back on others who do it better. If we could not do it in any degree, we should be mere instruments in the hands of those who could: they would be able to reduce us to slavery. Then how shall we best learn to do this? By being shewn the way in which it has already been successfully done. The processes by which truth is attained, reasoning, and observation, have been carried to their greatest known perfection in the physical sciences. As classical literature furnishes the most perfect types of the art of expression, so do the physical sciences those of the art of thinking. Mathematics, and its application to astronomy and natural philosophy, are the most complete example of the discovery of truths by reasoning; experimental science, of their discovery by direct observation. In all these cases we know that we can trust the operation, because the conclusions to which it has led have been found true by subsequent trial. It is by the study of these, then, that we may hope to qualify ourselves for distinguishing truth, in cases where there do not exist the same ready means of verification.

In what consists the principal and most characteristic difference between one human intellect and another? In their ability to judge correctly of evidence. Our direct perceptions of truth are so limited; we know so few things by immediate intuition, or, as it used to be called, by simple apprehension—that we depend for almost all our valuable knowledge, on evidence external to itself; and most of us are very unsafe hands at estimating evidence, where an appeal cannot be made to actual eyesight. The intellectual part of our education has nothing more important to do, than to correct or mitigate this almost universal infirmity—this summary and substance of nearly all purely intellectual weakness. To do this with effect needs all the resources which the most perfect system of intellectual training can command. Those resources, as every teacher knows, are but of

three kinds: first, models, secondly, rules, thirdly, appropriate practice. The models of the art of estimating evidence are furnished by science; the rules are suggested by science; and the study of science is the most fundamental portion of the practice.

Take in the first instance mathematics. It is chiefly from mathematics we realize the fact that there actually is a road to truth by means of reasoning; that anything real, and which will be found true when tried, can be arrived at by a mere operation of the mind. The flagrant abuse of mere reasoning in the days of the schoolmen, when men argued confidently to supposed facts of outward nature without properly establishing their premises, or checking the conclusions by observation, created a prejudice in the modern, and especially in the English mind, against deductive reasoning altogether, as a mode of investigation. The prejudice lasted long and was upheld by the misunderstood authority of Lord Bacon; until the prodigious applications of mathematics to physical science—to the discovery of the laws of external nature—slowly and tardily restored the reasoning process to the place which belongs to it as a source of real knowledge. Mathematics, pure and applied, are still the great conclusive example of what can be done by reasoning. Mathematics also habituates us to several of the principal precautions for the safety of the process. Our first studies in geometry teach us two invaluable lessons. One is, to lay down at the beginning, in express and clear terms, all the premises from which we intend to reason. The other is, to keep every step in the reasoning distinct and separate from all the other steps, and to make each step safe before proceeding to another; expressly stating to ourselves, at every joint in the reasoning, what new premise we there introduce. It is not necessary that we should do this at all times, in all our reasonings. But we must be always able and ready to do it. If the validity of our argument is denied, or if we doubt it ourselves, that is the way to check it. In this way we are often enabled to detect at once the exact place where paralogism or confusion get, in: and after sufficient practice we may be able to keep them out from the beginning. It is to mathematics, again, that we owe our first notion of a connected body of truth; truths which grow out of one another, and hang together so that each implies all the rest; that no one of them can be questioned without contradicting another or others, until in the end it appears that no part of the system can be false unless the whole is so. Pure mathematics first gave us this conception; applied mathematics extends to it the realm of physical nature. Applied mathematics shews us that not only the truths of abstract number and extension, but the external facts of the universe, which we apprehend by our senses, form, at least in a large part of all nature, a web similarly held together. We are able, by reasoning from a few fundamental truths, to explain and predict the phenomena of material objects: and what is still more remarkable, the fundamental truths were themselves found out by reasoning; for they are not such as are obvious to the senses, but had to be inferred by a mathematical process from a mass of minute details, which alone came within the direct reach of human observation. When Newton, in this manner, discovered the laws of the solar system, he created, for all posterity, the true idea of science. He gave the most perfect example we are ever likely to have, of that union of reasoning and observation, which by means of facts that can be directly observed, ascends to laws which govern multitudes of other facts — laws which not only explain and account for what we see, but give us assurance beforehand of much that we do not see, much that we never could have found out by observation, though, having been found out, it is always verified by the result.

While mathematics, and the mathematical sciences, supply us with a typical example of the ascertainment of truth by reasoning; those physical sciences which are not mathematical, such as chemistry, and purely experimental physics, shew us in equal perfection the other mode of arriving at certain truth, by observation, in its most accurate form, that of experiment. The value of mathematics in a logical point of view is an old topic with mathematicians, and has

even been insisted on so exclusively as to provoke a counter-exaggeration, of which a well-known essay by Sir William Hamilton is an example: but the logical value of experimental science is comparatively a new subject, yet there is no intellectual discipline more important than that which the experimental sciences afford. Their whole occupation consists in doing well, what all of us, during the whole of life, are engaged in doing, for the most part badly. All men do not affect to be reasoners, but all profess, and really attempt, to draw inferences from experience: yet hardly any one, who has not been a student of the physical sciences, sets out with any just idea of what the process of interpreting experience really is. If a fact has occurred once or oftener, and another fact has followed it, people think they have got an experiment, and are well on the road towards shewing that the one fact is the cause of the other. If they did but know the immense amount of precaution necessary to a scientific experiment; with what sedulous care the accompanying circumstances are contrived and varied, so as to exclude every agency but that which is the subject of the experiment — or, when disturbing agencies cannot be excluded, the minute accuracy with which their influence is calculated and allowed for, in order that the residue may contain nothing but what is due to the one agency under examination; if these things were attended to, people would be much less easily satisfied that their opinions have the evidence of experience; many popular notions and generalizations which are in all mouths, would be thought a great deal less certain than they are supposed to be; but we should begin to lay the foundation of really experimental knowledge, on things which are now the subjects of mere vague discussion, where one side finds as much to say and says it as confidently as another, and each person's opinion is less determined by evidence than by his accidental interest or prepossession. In politics, for instance, it is evident to whoever comes to the study from that of the experimental sciences, that no political conclusions of any value for practice can be arrived at by direct experience. Such specific experience as we can have, serves only to verify, and even that insufficiently, the conclusions of reasoning. Take any active force you please in politics, take the liberties of England, or free trade; how should we know that either of these things conduced to prosperity, if we could discern no tendency in the things themselves to produce it? If we had only the evidence of what is called our experience, such prosperity as we enjoy might be owing to a hundred other causes, and might have been obstructed, not promoted, by these. All true political science is, in one sense of the phrase, *à priori*, being deduced from the tendencies of things, tendencies known either through our general experience of human nature, or as the result of an analysis of the course of history, considered as a progressive evolution. It requires, therefore, the union of induction and deduction, and the mind that is equal to it must have been well disciplined in both. But familiarity with scientific experiment at least does the useful service of inspiring a wholesome scepticism about the conclusions which the mere surface of experience suggests.

The study, on the one hand, of mathematics and its applications, on the other, of experimental science, prepares us for the principal business of the intellect, by the practice of it in the most characteristic cases, and by familiarity with the most perfect and successful models of it. But in great things as in small, examples and models are not sufficient: we want rules as well. Familiarity with the correct use of a language in conversation and writing does not make rules of grammar unnecessary; nor does the amplest knowledge of sciences of reasoning and experiment dispense with rules of logic. We may have heard correct reasonings and seen skillful experiments all our lives — we shall not learn by mere imitation to do the like, unless we pay careful attention to how it is done. It is much easier in these abstract matters, than in purely mechanical ones, to mistake bad work for good. To mark out the difference between them is the province of logic. Logic lays down the general principles and laws of the search after truth; the conditions which, whether recognized or not, must actually have been observed if the mind has done

its work rightly. Logic is the intellectual complement of mathematics and physics. Those sciences give the practice, of which logic is the theory. It declares the principles, rules, and precepts, of which they exemplify the observance.

The science of Logic has two parts; ratiocinative and inductive logic. The one helps to keep us right in reasoning from premises, the other in concluding from observation. Ratiocinative logic is much older than inductive, because reasoning in the narrower sense of the word is an easier process than induction, and the science which works by mere reasoning, pure mathematics, had been carried to a considerable height while the sciences of observation were still in the purely empirical period. The principles of ratiocination, therefore were the earliest understood and systematized, and the logic of ratiocination is even now suitable to an earlier stage in education than that of induction. The principles of induction cannot be properly understood without some previous study of the inductive sciences: but the logic of reasoning, which was already carried to a high degree of perfection by Aristotle, does not absolutely require even a knowledge of mathematics, but can be sufficiently exemplified and illustrated from the practice of daily life.

Of Logic I venture to say, even if limited to that of mere ratiocination, the theory of names, propositions, and the syllogism, that there is no part of intellectual education which is of greater value, or whose place can so ill be supplied by anything else. Its uses, it is true, are chiefly negative; its function is, not so much to teach us to go right, as to keep us from going wrong. But in the operations of the intellect it is so much easier to go wrong than right; it is so utterly impossible for even the most vigorous mind to keep itself in the path but by maintaining a vigilant watch against all deviations, and noting all the byways by which it is possible to go astray — that the chief difference between one reasoner and another consists in their less or greater liability to be misled. Logic points out all the possible ways in which, starting from true premises, we may draw false conclusions. By its analysis of the reasoning process, and the forms it supplies for stating and setting forth our reasonings, it enables us to guard the points at which a fallacy is in danger of slipping in, or to lay our fingers upon the place where it has slipped in. When I consider how very simple the theory of reasoning is, and how short a time is sufficient for acquiring a thorough knowledge of its principles and rules, and even considerable expertness in applying them, I can find no excuse for omission to study it on the part of any one who aspires to succeed in any intellectual pursuit. Logic is the great disperser of hazy and confused thinking; it clears up the fogs which hide from us our own ignorance, and make us believe that we understand a subject when we do not. We must not be led away by talk about inarticulate giants who do great deeds without knowing how, and see into the most recondite truths without any of the ordinary helps, and without being able to explain to other people how they reach their conclusions, nor consequently to convince any other people of the truth of them. There may be such men, as there are deaf and dumb persons who do clever things, but for all that, speech and hearing are faculties by no means to be dispensed with. If you want to know whether you are thinking rightly, put your thoughts into words. In the very attempt to do this you will find yourselves, consciously or unconsciously, using logical forms. Logic compels us to throw our meaning into distinct propositions and our reasonings into distinct steps. It makes us conscious of all the implied assumptions on which we are proceeding, and which, if not true, vitiate the entire process. It makes us aware what extent of doctrine we commit ourselves to by any course of reasoning, and obliges us to look the implied premises in the face, and make up our minds whether we can stand to them. It makes our opinions consistent with themselves and with one another, and forces us to think clearly, even when it cannot make us think correctly. It is true that error may be consistent and systematic as well as truth; but this is not the common case. It is no small advantage to see clearly the principles and consequences involved in our opinions, and

which we must either accept, or else abandon those opinions. We are much nearer to finding truth when we search for it in broad daylight. Error, pursued rigorously to all that is implied in it, seldom fails to get detected by coming into collision with some known and admitted fact.

You will find abundance of people to tell you that logic is no help to thought, and that people cannot be taught to think by rules. Undoubtedly rules by themselves, without practice, go but a little way in teaching anything. But if the practice of thinking is not improved by rules, I venture to say it is the only difficult thing done by human beings that is not so. A man learns to saw wood principally by practice, but there are rules for doing it, grounded on the nature of the operation, and if he is not taught the rules, he will not saw well until he has discovered them for himself. Wherever there is a right way and a wrong, there must be a difference between them, and it must be possible to find out what the difference is; and when found out and expressed in words, it is a rule for the operation. If any one is inclined to disparage rules, I say to him, try to learn anything which there are rules for, without knowing the rules, and see how you succeed. To those who think lightly of the school logic, I say, take the trouble to learn it. You will easily do so in a few weeks, and you will see whether it is of no use to you in making your mind clear, and keeping you from stumbling in the dark over the most outrageous fallacies. Nobody, I believe, who has really learnt it, and who goes on using his mind, is insensible to its benefits, unless he started with a prejudice, or, like some eminent English and Scottish thinkers of the past century, is under the influence of a reaction against the exaggerated pretensions made by the schoolmen, not so much in behalf of logic as of the reasoning process itself. Still more highly must the use of logic be estimated, if we include in it, as we ought to do, the principles and rules of Induction as well as of Ratiocination. As the one logic guards us against bad deduction, so does the other against bad generalization, which is a still more universal error. If men easily err in arguing from one general proposition to another, still more easily do they go wrong in interpreting the observations made by themselves and others. There is nothing in which an untrained mind shows itself more hopelessly incapable, than in drawing the proper general conclusions from its own experience. And even trained minds, when all their training is on a special subject, and does not extend to the general principles of induction, are only kept right, when there are ready opportunities of verifying their inferences by facts. Able scientific men, when they venture upon subjects in which they have no facts to check them, are often found drawing conclusions or making generalizations from their experimental knowledge, such as any sound theory of induction would shew to be utterly unwarranted. So true is it that practice alone, even of a good kind, is not sufficient without principles and rules. Lord Bacon had the great merit of seeing that rules were necessary, and conceiving, to a very considerable extent, their true character. The defects of his conceptions were such as were inevitable while the inductive sciences were only in the earliest stage of their progress, and the highest efforts of the human mind in that direction had not yet been made. Inadequate as the Baconian view of induction was, and rapidly as the practice outgrew it, it is only within a generation or two that any considerable improvement has been made in the theory; very much through the impulse given by two of the many distinguished men who have adorned the Scottish universities, Dugald Stewart and Brown.

I have given a very incomplete and summary view of the educational benefits derived from instruction in the more perfect sciences, and in the rules for the proper use of the intellectual faculties which the practice of those sciences has suggested. There are other sciences, which are in a more backward state, and tax the whole powers of the mind in its mature years, yet a beginning of which may be beneficially made in university studies, while a tincture of them is valuable even to those who are never likely to proceed further. The first is physiology; the science of the laws of organic and animal life, and especially of the structure and

functions of the human body. It would be absurd to pretend that a profound knowledge of this difficult subject can be acquired in youth, or as a part of general education. Yet an acquaintance with its leading truths is one of those acquirements which ought not to be the exclusive property of a particular profession. The value of such knowledge for daily uses has been made familiar to us all by the sanitary discussions of late years. There is hardly one among us who may not, in some position of authority, be required to form an opinion and take part in public action on sanitary subjects. And the importance of understanding the true conditions of health and disease — of knowing how to acquire and preserve that healthy habit of body which the most tedious and costly medical treatment so often fails to restore when once lost, should secure a place in general education for the principal maxims of hygiene, and some of those even of practical medicine. For those who aim at high intellectual cultivation, the study of physiology has still greater recommendations, and is, in the present state of advancement of the higher studies, a real necessity. The practice which it gives in the study of nature is such as no other physical science affords in the same kind, and is the best introduction to the difficult questions of politics and social life. Scientific education, apart from professional objects, is but a preparation for judging rightly of Man, and of his requirements and interests. But to this final pursuit, which has been called *par excellence* the proper study of mankind, physiology is the most serviceable of the sciences, because it is the nearest. Its subject is already Man ; the same complex and manifold being, whose properties are not independent of circumstance, and immovable from age to age, like those of the ellipse and hyperbola, or of sulphur and phosphorus, but are infinitely various, indefinitely modifiable by art or accident, graduating by the nicest shades into one another, and reacting upon one another in a thousand ways, so that they are seldom capable of being isolated and observed separately. With the difficulties of the study of a being so constituted, the physiologist, and he alone among scientific enquirers, is already familiar. Take what view we will of man as a spiritual being, one part of his nature is far more like another than either of them is like anything else. In the organic world we study nature under disadvantages very similiar to those which affect the study of moral and political phenoma : our means of making experiments are almost as limited, while the extreme complexity of the facts makes the conclusions of general reasoning unusually precarious, on account of the vast number of circumstances that conspire to determine every result. Yet in spite of these obstacles, it is found possible in physiology to arrive at a considerable number of well-ascertained and important truths. This therefore is an excellent school in which to study the means of overcoming similar difficulties elsewhere. It is in physiology too that we are first introduced to some of the conceptions which play the greatest part in the moral and social sciences, but which do not occur at all in those of inorganic nature. As, for instance, the idea of predisposition, and of predisposing causes, as distinguished from exciting causes. The operation of all moral forces is immensely influenced by predisposition : without that element, it is impossible to explain the commonest facts of history and social life. Physiology is also the first science in which we recognise the influence of habit — the tendency of something to happen again merely because it has happened before. From physiology, too, we get our clearest notion of what is meant by development or evolution, The growth of a plant or animal from the first germ is the typical specimen of a phemonenon which rules through the whole course of the history of man and society — increase of function, through expansion and differentiation of structure by internal forces. I can not enter into the subject at greater length ; it is enough if I throw out hints which may be germs of further thought in yourselves. Those who aim at high intellectual achievements may be assured that no part of their time will be less wasted, than that which they employ in becoming familiar with the methods and with the main conceptions of the science of organization and life.

Physiology, at its upper extremity, touches on Psychology, or the Philosophy of mind

and without raising any disputed questions about the limits between Matter and Spirit, the nerves and brain are admitted to have so intimate a connexion with the mental operations, that the student of the last cannot dispense with a considerable knowledge of the first. The value of psychology itself need hardly be expatiated upon in a Scottish university; for it has always been there studied with brilliant success. Almost everything which has been contributed from these islands towards its advancement since Locke and Berkeley, has until very lately, and much of it even in the present generation, proceeded from Scottish authors and Scottish professors. Psychology, in truth, is simply the knowledge of the laws of human nature. If there is anything that deserves to be studied by man, it is his own nature and that of his fellow-men: and if it is worth studying at all, it is worth studying scientifically, so as to reach the fundamental laws which underlie and govern all the rest. With regard to the suitableness of this subject for general education, a distinction must be made. There are certain observed laws of our thoughts and of our feelings which rest upon experimental evidence, and, once seized, are a clue to the interpretation of much that we are conscious of in ourselves, and observe in one another. Such, for example, are the laws of association. Psychology, so far as it consists of such laws — I speak of the laws themselves, not of their disputed applications — is as positive and certain a science as chemistry, and fit to be taught as such. When, however, we pass beyond the bounds of these admitted truths, to questions which are still in controversy among the different philosophical schools — how far the higher operations of the mind can be explained by association, how far we must admit other primary principles — what faculties of the mind are simple, what complex, and what is the composition of the latter — above all, when we embark upon the sea of metaphysics properly so called, and enquire, for instance, whether time and space are real existences, as is our spontaneous impression, or forms of our sensitive faculty, as is maintained by Kant, or complex ideas generated by association; whether matter and spirit are conceptions merely relative to our faculties, or facts existing *per se*, and in the latter case, what is the nature and limit of our knowledge of them; whether the will of man is free or determined by causes, and what is the real difference between the two doctrines; matters on which the most thinking men, and those who have given most study to the subjects, are still divided; it is neither to be expected nor desired that those who do not specially devote themselves to the higher departments of speculation should employ much of their time in attempting to get to the bottom of these questions. But it is a part of liberal education to know that such controversies exist, and, in a general way, what has been said on both sides of them. It is instructive to know the failures of the human intellect as well as its successes, its imperfect as well as its perfect attainments; to be aware of the open questions, as well as of those which have been definitively resolved. A very summary view of these disputed matters may suffice for the many; but a system of education is not intended solely for the many: it has to kindle the aspirations and aid the efforts of those who are destined to stand forth as thinkers above the multitude: and for these there is hardly to be found any discipline comparable to that which these metaphysical controversies afford. For they are essentially questions about the estimation of evidence; about the ultimate grounds of belief; the conditions required to justify our most familiar and intimate convictions; and the real meaning and import of words and phrases which we have used from infancy as if we understood all about them, which are even at the foundation of human language, yet of which no one except a metaphysician has rendered to himself a complete account. Whatever philosophical opinions the study of these questions may lead us to adopt, no one ever came out of the discussion of them without increased vigor of understanding, an increased demand for precision of thought and language, and a more careful and exact appreciation of the nature of proof. There never was any sharpener of the intellectual faculties superior to the Berkeleian controversy. There is even

now no reading more profitable to students — confining myself to writers in our own language, and notwithstanding that so many of their speculations are already obsolete — than Hobbes and Locke, Reid and Stewart, Hume, Hartley, and Brown : on condition that these great thinkers are not read passively, as masters to be followed, but actively, as supplying materials and incentives to thought. To come to our own cotemporaries, he who has mastered Sir William Hamilton and your own lamented Ferrier as distinguished representatives of one of the two great schools of philosophy, and an eminent professor in a neighbouring University, Professor Bane, probably the greatest living authority in the other, has gained a practice in the most searching methods of philosophic investigation applied to the most arduous subjects, which is no inadequate preparation for any intellectual difficulties that he is ever likely to be called on to resolve.

In this brief outline of a complete scientific education, I have said nothing about direct instruction in that which it is the chief of all the ends of intellectual education to qualify us for — the exercise of thought on the great interests of mankind as moral and social beings — ethics and politics, in the largest sense. These things are not, in the existing state of human knowledge, the subject of a science, generally admitted and accepted. Politics cannot be learnt once for all, from a textbook, or the instructions of a master. What we require to be taught on that subject, is to be our own teachers. It is a subject on which we have no masters to follow; each must explore for himself, and exercise an independent judgment. Scientific politics do not consist in having a set of conclusions ready made, to be applied everywhere indiscriminately, but in setting the mind to work in a scientific spirit to discover in each instance the truths applicable to the given case. And this, at present, scarcely any two persons do in the same way. Education is not entitled, on this subject, to recommend any set of opinions as resting on the authority of established science. But it can supply the student with materials for his own mind, and helps to use them. It can make him acquainted with the best speculations on the subject, taken from different points of view : none of which will be found complete, while each embodies some considerations really relevant, really requiring to be taken into the account. Education may also introduce us to the principal facts which have a direct bearing on the subject, namely the different modes or stages of civilization that have been found among mankind, and the characteristic properties of each. This is the true purpose of historical studies, as prosecuted in an University. The leading facts of ancient and modern history should be known by the student from his private reading: if that knowledge be wanting, it cannot possibly be supplied here. What a Professor of History has to teach, is the meaning of those facts. His office is to help the student in collecting from history what are the main differences between human beings, and between the institutions of society, at one time or place and at another : in picturing to himself human life and the human conception of life, as they were at the different stages of human development: in distinguishing between what is the same in all ages and what is progressive, and forming some incipient conception of the causes and laws of progress. All these things are as yet very imperfectly understood even by the most philosophic enquirers, and are quite unfit to be taught dogmatically. The object is to lead the student to attend to them; to make him take interest in history not as mere narrative, but as a chain of causes and effects still unwinding itself before his eyes, and full of momentous consequences to himself and his descendants; the unfolding of a great epic or dramatic action, to terminate in the happiness or misery, the elevation or degradation, of the human race; an unremitting conflict between good and evil powers, of which every act done by any of us, insignificant as we are, forms one of the incidents; a conflict in which even the smallest of us cannot escape from taking part, in which whoever does not help the right side is helping the wrong, and for our share in which, whether it be greater or smaller, and let its actual consequences

be visible or in the main invisible, no one of us can escape the responsibility. Though education cannot arm and equip its pupils for this fight with any complete philosophy either of politics or of history, there is much positive instruction that it can give them, having a direct bearing on the duties of citizenship. They should be taught the outlines of the civil and political institutions of their own country, and in a more general way, of the more advanced of the other civilized nations. Those branches of politics, or of the laws of social life, in which there exists a collection of facts or thoughts sufficiently sifted and methodized to form the beginning of a science, should be taught *ex professo*. Among the chief of these is Political Economy; the sources and conditions of wealth and material prosperity for aggregate bodies of human beings. This study approaches nearer to the rank of a science, in the sense in which we apply that name to the physical sciences, than anything else connected with politics yet does. I need not enlarge on the important lessons which it affords for the guidance of life, and for the estimation of laws and institutions, or on the necessity of knowing all that it can teach in order to have true views of the course of human affairs, or form plans for their improvement which will stand actual trial. The same persons who cry down Logic will generally warn you against Political Economy. It is unfeeling, they will tell you. It recognizes unpleasant facts. For my part, the most unfeeling thing I know of is the law of gravitation: it breaks the neck of the best and most amiable person without scruple, if he forgets for a single moment to give heed to it. The winds and waves too are very unfeeling. Would you advise those who go to sea to deny the winds and waves — or to make use of them, and find the means of guarding against their dangers? My advice to you is to study the great writers on Political Economy, and hold firmly by whatever in them you find true; and depend upon it that if you are not selfish or hard-hearted already, Political Economy will not make you so. Of no less importance than Political Economy is the study of what is called Jurisprudence; the general principles of law; the social necessities which laws are required to meet; the features common to all systems of law, and the differences between them; the requisites of good legislation, the proper mode of constructing a legal system, and the best constitution of courts of justice and modes of legal procedure. These things are not only the chief part of the business of government, but the vital concern of every citizen; and their improvement affords a wide scope for the energies of any duly prepared mind, ambitious of contributing towards the better condition of the human race. For this, too, admirable helps have been provided by writers of our own or of a very recent time. At the head of them stands Bentham; undoubtedly the greatest master who ever devoted the labour of a life to let in light on the subject of law; and who is the more intelligible to non-professional persons, because, as his way is, he builds up the subject from its foundation in the facts of human life, and shows by careful consideration of ends and means, what law might and ought to be, in deplorable contrast with what it is. Other enlightened jurists have followed with contributions of two kinds, as the type of which I may take two works, equally admirable in their respective times. Mr. Austin, in his Lectures on Jurisprudence, takes for his basis the Roman law, the most elaborately consistent legal system which history has shown us in actual operation, and that which the greatest number of accomplished minds have employed themselves in harmonizing. From this he singles out the principles and distinctions which are of general applicability, and employs the powers and resources of a most precise and analytic mind to give to those principles and distinctions a philosophic basis, grounded in the universal reason of mankind, and not in mere technical convenience. Mr. Maine, in his treatise on Ancient Law in its relations to Modern Thought, shows from the history of law, and from what is known of the primitive institutions of mankind, the origin of much that has lasted till now, and has a firm footing both in the laws and in the ideas of modern times; shewing that many of these

things never originated in reason, but are relics of the institutions of barbarous society, modified more or less by civilization, but kept standing by the persistency of ideas which were the offspring of those barbarous institutions, and have survived their parent. The path opened by Mr. Maine has been followed up by others, with additional illustrations of the influence of obsolete ideas on modern institutions, and of obsolete institutions on modern ideas; an action and reaction which perpetuate, in many of the greatest concerns, a mitigated barbarism: things being continually accepted as dictates of nature and necessities of life, which, if we knew all, we should see to have originated in artificial arrangements of society, long since abandoned and condemned.

To these studies I would add International Law; which I decidedly think should be taught in all universities, and should form part of all liberal education. The need of it is far from being limited to diplomatists and lawyers; it extends to every citizen. What is called the Law of Nations is not properly law, but a part of ethics: a set of moral rules, accepted as authoritative by civilized states. It is true that these rules neither are nor ought to be of eternal obligation, but do and must vary more or less from age to age, as the consciences of nations become more enlightened and the exigencies of political society undergo change. But the rules mostly were at their origin, and still are, an application of the maxims of honesty and humanity to the intercourse of states. They were introduced by the moral sentiments of mankind, or by their sense of the general interest, to mitigate the crimes and sufferings of a state of war, and to restrain governments and nations from unjust or dishonest conduct towards one another in time of peace. Since every country stands in numerous and various relations with the other countries of the world, and many, our own among the number, exercise actual authority over some of these, a knowledge of the established rules of international morality is essential to the duty of every nation, and therefore of every person in it who helps to make up the nation, and whose voice and feeling form a part of what is called public opinion. Let not any one pacify his conscience by the delusion that he can do no harm if he takes no part, and forms no opinion. Bad men need nothing more to compass their ends, than that good men should look on and do nothing. He is not a good man who, without a protest, allows wrong to be committed in his name, and with the means which he helps to supply, because he will not trouble himself to use his mind on the subject. It depends on the habit of attending to and looking into public transactions, and on the degree of information and solid judgment respecting them that exists in the community, whether the conduct of the nation as a nation, both within itself and towards others, shall be selfish, corrupt and tyrannical, or rational and enlightened, just and noble.

Of these more advanced studies, only a small commencement can be made at schools and universities; but even this is of the highest value, by awakening an interest in the subjects, by conquering the first difficulties, and inuring the mind to the kind of exertion which the studies require, by implanting a desire to make further progress, and directing the student to the best tracks and the best helps. So far as these branches of knowledge have been acquired, we have learnt, or been put into the way of learning, our duty, and our work in life. Knowing it, however, is but half the work of education; it still remains, that what we know, we shall be willing and determined to put in practice. Nevertheless, to know the truth is already a great way towards disposing us to act upon it. What we see clearly and apprehend keenly, we have a natural desire to act out. "To see the best, and yet the worst pursue," is a possible but not a common state of mind; those who follow the wrong have generally first taken care to be voluntarily ignorant of the right. They have silenced their conscience, but they are not knowingly disobeying it. If you take an average human mind while still young, before the objects it has chosen in life have given it a turn in any bad direction, you will generally find it desiring what is good, right, and for the benefit of all; and if that season is properly used to implant the knowl-

edge and give the training which shall render rectitude of judgment more habitual than sophistry, a serious barrier will have been erected against the inroads of selfishness and falsehood. Still, it is a very imperfect education which trains the intelligence only, but not the will. No one can dispense with an education directed expressly to the moral as well as the intellectual part of his being. Such education, so far as it is direct, is either moral or religious; and these may either be treated as distinct, or as different aspects of the same thing. The subject we are now considering is not education as a whole, but scholastic education, and we must keep in view the inevitable limitations of what schools and universities can do. It is beyond their power to educate morally or religiously. Moral and religious education consist in training the feelings and the daily habits; and these are, in the main, beyond the sphere and inaccessible to the control of public education. It is the home, the family, which gives us the moral or religious education we really receive; and this is completed, and modified, sometimes for the better, often for the worse, by society, and the opinions and feelings with which we are there surrounded. The moral or religious influence which an university can exercise, consists less in any express teaching, than in the pervading tone of the place. Whatever it teaches, it should teach as penetrated by a sense of duty; it should present all knowledge as chiefly a means to worthiness of life, given for the double purpose of making each of us practically useful to his fellow creatures, and of elevating the character of the species itself; exalting and dignifying our nature. There is nothing which spreads more contagiously from teacher to pupil than elevation of sentiment: often and often have students caught from the living influence of a professor, a contempt for mean and selfish objects, and a noble ambition to leave the world better than they found it, which they have carried with them throughout life. In these respects, teachers of every kind have natural and peculiar means of doing with effect, what every one who mixes with his fellow-beings, or addresses himself to them in any character, should feel bound to do to the extent of his capacity and opportunities. What is special to an university on these subjects belongs chiefly, like the rest of its work, to the intellectual department. An university exists for the purpose of laying open to each succeeding generation, as far as the conditions of the case admit, the accumulated treasure of the thoughts of mankind. As an indispensable part of this, it has to make known to them what mankind at large, their own country, and the best and wisest individual men, have thought on the great subjects of morals and religion. There should be, and there is in most universities, professorial instruction in moral philosophy; but I could wish that this instruction were of a somewhat different type from what is ordinarily met with. I could wish that it were more expository, less polemical, and above all less dogmatic. The learner should be made acquainted with the principal systems of moral philosophy which have existed and been practically operative among mankind, and should hear what there is to be said for each: the Aristotelian, the Epicurean, the Stoic, the Judaic, the Christian in the various modes of its interpretation, which differ almost as much from one another as the teachings of those earlier schools. He should be made familiar with the different standards of right and wrong which have been taken as the basis of ethics; general utility, natural justice, natural rights, a moral sense, principles of practical reason, and the rest. Among all these, it is not so much the teacher's business to take a side, and fight stoutly for some one against the rest, as it is to direct them all towards the establishment and preservation of the rules of conduct most advantageous to mankind. There is not one of these systems which has not its good side; not one from which there is not something to be learnt by the votaries of the others; not one which is not suggested by a keen, though it may not always be a clear perception of some important truths, which are the prop of the system, and the neglect or undervaluing of which in other systems is their characteristic infirmity. A system which may be as a whole erroneous, is still valuable, until it has forced upon mankind a sufficient attention to the portion of truth which suggested

it. The ethical teacher does his part best, when he points out how each system may be strengthened even on its own basis, by taking into more complete account the truths which other systems have realized more fully and made more prominent. I do not mean that he should encourage an essentially sceptical electicism. While placing every system in the best aspect it admits of, and endeavouring to draw from all of them the most salutary consequences compatible with their nature, I would by no means debar him from enforcing by his best arguments his own preference for some one of the number. They cannot be all true; though those which are false as theories may contain particular truths, indispensable to the completeness of the true theory. But on this subject, even more than on any of those I have previously mentioned, it is not the teacher's business to impose his own judgment, but to inform and discipline that of his pupil.

And this same clue, if we keep hold of it, will guide us through the labyrinth of conflicting thought into which we enter when we touch the great question of the relation of education to religion. As I have already said, the only really effective religious education is the parental — that of home and childhood. All that social and public education has in its power to do, further than by a general pervading tone of reverence and duty, amounts to little more than the information which it can give; but this is extremely valuable. I shall not enter into the question which has been debated with so much vehemence in the last and present generation, whether religion ought to be taught in all universities and public schools, seeing that religion is the subject of all others on which men's opinions are most widely at variance. On neither side of this controversy do the disputants seem to me to have sufficiently freed their minds from the old notion of education, that it consists in the dogmatic inculcation from authority, of what the teacher deems true. Why should it be impossible, that information of the greatest value, on subjects connected with religion, should be brought before the student's mind; that he should be made acquainted with so important a part of the national thought, and of the intellectual labours of past generations, as those relating to religion, without being taught dogmatically the doctrines of any church or sect? Christianity being a historical religion, the sort of religious instruction which seems to me most appropriate to an University is the study of ecclesiastical history. If teaching, even on matters of scientific certainty, should aim quite as much at showing how the results are arrived at, as at teaching the results themselves, far more, then, should this be the case on subjects where there is the widest diversity of opinion among men of equal ability, and who have taken equal pains to arrive at the truth. This diversity should of itself be a warning to a conscientious teacher that he has no right to impose his opinion authoritatively upon a youthful mind. His teaching should not be in the spirit of dogmatism, but in that of enquiry. The pupil should not be addressed as if his religion had been chosen for him, but as one who will have to choose it for himself. The various Churches, established and unestablished, are quite competent to the task which is peculiarly theirs, that of teaching each its own doctrines, as far as necessary, to its own rising generation. The proper business of an University is different: not to tell us from authority what we ought to believe, and make us accept the belief as a duty, but to give us information and training, and help us to form our own belief in a manner worthy of intelligent beings, who seek for truth at all hazards, and demand to know all the difficulties, in order that they may be better qualified to find, or recognize, the most satisfactory mode of resolving them. The vast importance of these questions — the great results as regards the conduct of our lives, which depend upon our choosing one belief or another — are the strongest reasons why we should not trust our judgment when it has been formed in ignorance of the evidence, and why we should not consent to be restricted to a one-sided teaching, which informs us of what a particular teacher or association of teachers receive as true doctrine and sound argument, but of nothing more.

I do not affirm that an University, if it

represses free thought and enquiry, must be altogether a failure, for the freest thinkers have often been trained in the most slavish seminaries of learning. The great Christian reformers were taught in Roman Catholic Universities; the sceptical philosophers of France were mostly educated by the Jesuits. The human mind is sometimes impelled all the more violently in one direction, by an over zealous and demonstrative attempt to drag it in the opposite. Bnt this is not what Universities are appointed for — to drive men from them, even into good, by excess of evil. An University ought to be a place of free speculation. The more diligently it does its duty in all other respects, the more certain it is to be that. The old English Universities, in the present generation are doing better work than they have done within human memory in teaching the ordinary studies of their curriculum; and one of the consequences has been, that whereas they formerly seemed to exist mainly for the repression of independent thought, and the chaining up of the individual intellect and conscience, they are now the great foci of free and manly enquiry, to the higher and professional classes, south of the Tweed. The ruling minds of those ancient seminaries have at last remembered that to place themselves in hostility to the free use of the understanding, is to abdicate their own best privilege, that of guiding it. A modest deference, at least provisional, to the united authority of the specially instructed, is becoming in a youthful and imperfectly formed mind; but when there is no united authority — when the specially instructed are so divided and scattered that almost any opinion can boast of some high authority, and no opinion whatever can claim all; when, therefore, it can never be deemed extremely improbable that one who uses his mind freely may see reason to change his first opinion; then, whatever you do, keep, at all risks, your minds open: do not barter away your freedom of thought. Those of you who are destined for the clerical profession are, no doubt, so far held to a certain number of doctrines, that if they ceased to believe them they would not be justified in remaining in a position in which they would be required to teach insincerely. But use your influence to make those doctrines as few as possible. It is not right that men should be bribed to hold out against conviction — to shut their ears against objections, or, if the objections penetrate, to continue professing full and unfaltering belief when their confidence is already shaken. Neither is it right that if men honestly profess to have changed some of their religious opinion, their honesty should as a matter of course exclude them from taking a part for which they may be admirably qualified, in the spiritual instruction of the nation. The tendency of the age, on both sides of the ancient Border, is towards the relaxation of formularies, and a less rigid construction of articles. This very circumstance, by making the limits of orthodoxy less definite, and obliging every one to draw the line for himself, is an embarrassment to consciences. But I hold entirely with those clergymen who elect to remain in the national church, so long as they are able to accept its articles and confessions in any sense or with any interpretation consistent with common honesty, whether it be the generally received interpretation or not. If all were to desert the church who put a large and liberal construction on its terms of communion, or who would wish to see those terms widened, the national provision for religious teaching and worship would be left utterly to those who take the narrowest, the most literal, and purely textual view of the formularies; who, though by no means necessarily bigots, are under the great disadvantage of having the bigots for their allies, and who, however great their merits may be, and they are often very great, yet if the church is improvable, are not the most likely persons to improve it. Therefore, if it were not an impertinence in me to tender advice in such a matter, I should say, let all who conscientiously can, remain in the church. A church is far more easily improved from within than from without. Almost all the illustrious reformers of religion began by being clergymen: but they did not think that their profession as clergymen was inconsistent with being reformers. They mostly indeed ended their days outside the churches in which they were born; but it

was because the churches, in an evil hour for themselves, cast them out. They did not think it any business of theirs to withdraw. They thought they had a better right to remain in the fold, than those who had expelled them.

I have now said what I had to say on the two kinds of education which the system of schools and universities is intended to promote — intellectual education, and moral education: knowledge and the training of the knowing faculty, conscience and that of the moral faculty. These are the two main ingredients of human culture; but they do not exhaust the whole of it. There is a third division, which, if subordinate, and owing allegiance to the two others, is barely inferior to them, and not less needful to the completeness of the human being; I mean the æsthetic branch; the culture which comes through poetry and art, and may be described as the education of the feelings, and the cultivation of the beautiful. This department of things deserves to be regarded in a far more serious light than is the custom of these countries. It is only of late, and chiefly by a superficial imitation of foreigners, that we have begun to use the word Art by itself and to speak of Art as we speak of Science, or Government, or Religion: we used to talk of the Arts, and more specifically of the Fine Arts: and even by them were vulgarly meant only two forms of art, Painting and Sculpture, the two which as a people we cared least about — which were regarded even by the more cultivated among us as little more than branches of domestic ornamentation, a kind of elegant upholstery. The very words "Fine Arts" called up a notion of frivolity, of great pains expended on a rather trifling object — on something which differed from the cheaper and commoner arts of producing pretty things, mainly by being more difficult, and by giving fops an opportunity of pluming themselves on caring for it and on being able to talk about it. This estimate extended in no small degree, though not altogether, even to poetry; the queen of arts, but, in Great Britain, hardly included under the name. It cannot exactly be said that poetry was little thought of; we were proud of our Shakespeare and Milton, and in one period at least of our history, that of Queen Anne, it was a high literary distinction to be a poet; but poetry was hardly looked upon in any serious light, or as having much value except as an amusement or excitement, the superiority of which over others principally consisted in being that of a more refined order of minds. Yet the celebrated saying of Fletcher of Saltoun, "Let who will make the laws of a people if I write their songs," might have taught us how great an instrument for acting on the human mind we were undervaluing. It would be difficult for anybody to imagine that "Rule Britannia," for example, or "Scots wha hae," had no permanent influence on the higher region of human character; some of Moore's songs have done more for Ireland than all Grattan's speeches: and songs are far from being the highest or most impressive form of poetry. On these subjects, the mode of thinking and feeling of other countries was not only not intelligible, but not credible, to an average Englishman. To find Art ranking on a complete equality, in theory at least, with Philosophy, Learning, and Science — as holding an equally important place among the agents of civilization and among the elements of the worth of humanity; to find even painting and sculpture treated as great social powers, and the art of a country as a feature in its character and condition, little inferior in importance to either its religion or its government; all this only did not amaze and puzzle Englishmen, because it was too strange for them to be able to realize it, or, in truth, to believe it possible: and the radical difference of feeling on this matter between the British people and those of France, Germany, and the Continent generally, is one among the causes of that extraordinary inability to understand one another, which exists between England and the rest of Europe while it does not exist to anything like the same degree between one nation of Continental Europe and another. It may be traced to the two influences which have chiefly shaped the British character since the days of the Stuarts: commercial money-getting business, and religious Puritanism. Business, demanding the whole of the facul-

ties, and whether pursued from duty or the love of gain, regarding as a loss of time whatever does not conduce directly to the end; Puritanism, which looking upon every feeling of human nature, except fear and reverence for God, as a snare, if not as partaking of sin, looked coldly, if not disapprovingly, on the cultivation of the sentiments. Different causes have produced different effects in the Continental nations; among whom it is even now observable that virtue and goodness are generally for the most part an affair of the sentiments, while with us they are almost exclusively an affair of duty. Accordingly, the kind of advantage which we have had over many other countries in point of morals — I am not sure that we are not losing it — has consisted in greater tenderness of conscience. In this we have had on the whole a real superiority, though one principally negative; for conscience is with most men a power chiefly in the way of restraint — a power which acts rather in staying our hands from any great wickedness, than by the direction it gives to the general covrse of our desires and sentiments. One of the commonest types of character among us is that of a man all whose ambition is self-regarding; who has no higher purpose in life than to enrich or raise in the world himself and his family; who never dreams of making the good of his fellow-creatures or of his country an habitual object, further than giving away, annually or from time to time, certain sums in charity; but who has a conscience sincerely alive to whatever is generally considered wrong, and would scruple to use any very illegitimate means for attaining his self-interested objects. While it will often happen in other countries that men whose feelings and whose active energies point strongly in an unselfish direction, who have the love of their country, of human improvement, of human freedom, even of virtue, in great strength, and of whose thoughts and activity a large share is devoted to disinterested objects, will yet, in the pursuit of these or of any other objects that they strongly desire, permit themselves to do wrong things which the other man, though intrinsically, and taking the whole of his character, farther removed from what a human being ought to be, could not bring to himself to commit. It is of no use to debate which of these two states of mind is the best, or rather the least bad. It is quite possible to cultivate the conscience and the sentiments too. Nothing hinders us from so training a man that he will not, even for a disinterested purpose, violate the moral law, and also feeding and encouraging those high feelings, on which we mainly rely for lifting men above low and sordid objects, and giving them a higher conception of what constitutes success in life. If we wish men to practise virtue, it is worth while trying to make them love virtue, and feel it an object in itself, and not a tax paid for leave to pursue other objects. It is worth training them to feel, not only actual wrong or actual meanness, but the absence of noble aims and endeavours, as not merely blameable but also degrading: to have a feeling of the miserable smallness of mere self in the face of this great universe, of the collective mass of our fellow creatures, in the face of past history and of the indefinite future —the poorness and insignificance of human life if it is to be all spent in making things comfortable for ourselves and our kin, and raising ourselves and them a step or two on the social ladder. Thus feeling, we learn to respect ourselves only so far as we feel capable of nobler objects: and if unfortunately those by whom we are surrounded do not share our aspirations, perhaps disapprove the conduct to which we are promoted by them — to sustain ourselves by the ideal sympathy of the great characters in history, or even in fiction, and by the contemplation of an idealized posterity: shall I add, of ideal perfection embodied in a Divine Being? Now, of this elevated tone of mind the great source of inspiration is poetry, and all literature so far as it is poetical and artistic. We may imbibe exalted feelings from Plato, or Demosthenes, or Tacitus, but it is in so far as those great men are not solely philosophers or orators or historians, but poets and artists. Nor is it only loftiness, only the heroic feelings, that are bred by poetic cultivation. Its power is as great in calming the soul as in elevating it — in fostering the milder emotions, as the more exalted. It brings home

to us all those aspects of life which take hold of our nature on its unselfish side, and lead us to identify our joy and grief with the good or ill of the system of which we form a part; and all those solemn or pensive feelings, which, without having any direct application to conduct, incline us to take life seriously, and predispose us to the reception of anything which comes before us in the shape of duty. Who does not feel a better man after a course of Dante, or of Wordsworth, or, I will add, of Lucretius or the Georgics, or after brooding over Gray's Elegy, or Shelley's Hymn to Intellectual Beauty? I have spoken of poetry, but all the other modes of art produce similar effects in their degree. The races and nations whose senses are naturally finer and their sensuous perceptions more exercised than ours, receive the same kind of impressions from painting and sculpture: and many of the more delicately organized among ourselves do the same. All the arts of expression tend to keep alive and in activity the feelings they express. Do you think that the great Italian painters would have filled the place they did in the European mind, would have been universally ranked among the greatest men of their time, if their productions had done nothing for it but to serve as the decoration of a public hall or a private *salon*? Their Nativities and Crucifixions, their glorious Madonnas and Saints, were to their susceptible Southern country-men the great school not only of devotional, but of all the elevated and all the imaginative feelings. We colder Northerns may approach to a conception of this function of art when we listen to an oratorio of Handel, or give ourselves up to the emotions excited by a Gothic cathedral. Even apart from any specific emotional expression, the mere contemplation of beauty of a high order produces in no small degree this elevating effect on the character. The power of natural scenery addresses itself to the same region of human nature which corresponds to Art. There are few capable of feeling the sublimer order of natural beauty, such as your own Highlands and other mountain regions afford, who are not, at least temporarily, raised by it above the littleness of humanity, and made to feel the puerility of the petty objects which set men's interests at variance, contrasted with the nobler pleasures which all might share. To whatever avocations we may be called in life, let us never quash these susceptibilities within us, but carefully seek the opportunities of maintaining them in exercise. The more prosaic our ordinary duties, the more necessary it is to keep up the tone of our minds by frequent visits to that higher region of thought and feeling, in which every work seems dignified in proportion to the ends for which, and the spirit in which, it is done; where we learn, while eagerly seizing every opportunity of exercising higher faculties and performing higher duties, to regard all useful and honest work as a public function, which may be ennobled by the mode of performing it — which has not properly any other nobility than what that gives — and which, if ever so humble, is never mean but when it is meanly done, and when the motives from which it is done are mean motives. There is, besides, a natural affinity between goodness and the cultivation of the Beautiful, when it is real cultivation, and not a mere unguided instinct. He who has learnt what beauty is, if he be of a virtuous character, will desire to realize it in his own life — will keep before himself a type of perfect beauty in human character, to light his attempts at self-culture. There is a true meaning in the saying of Goethe, though liable to be misunderstood and perverted, that the Beautiful is greater than the Good; for it includes the Good, and adds something to it: it is the Good made perfect, and fitted with all the collateral perfections which make it a finished and completed thing. Now, this sense of perfection, which would make us demand from every creation of man the very utmost that it ought to give, and render us intolerant of the smallest fault in ourselves or in anything we do, is one of the results of Art cultivation. No other human productions come so near to perfection as works of pure Art. In all other things, we are, and may reasonably be, satisfied if the degree of excellence is as great as the object immediately in view seems to us to be worth: but in Art, the perfection is itself the object. If I were to

define Art, I should be inclined to call it, the endeavour after perfection in execution. If we meet with even a piece of mechanical work which bears the marks of being done in this spirit — which is done as if the workman loved it, and tried to make it as good as possible, though something less good would have answered the purpose for which it was ostensibly made — we say that he has worked like an artist. Art, when really cultivated, and not merely practised empirically, maintains, what it first gave the conception of, an ideal Beauty, to be eternally aimed at, though surpassing what can be actually attained; and by this idea it trains us never to be completely satisfied with imperfection in what we ourselves do and are: to idealize, as much as possible, every work we do, and most of all, our own characters and lives.

And now, having travelled with you over the whole range of the materials and training which an University supplies as a preparation for the higher uses of life, it is almost needless to add any exhortation to you to profit by the gift. Now is your opportunity for gaining a degree of insight into subjects larger and far more ennobling than the minutiæ of a business or a profession, and for acquiring a facility of using your minds on all that concerns the higher interests of man, which you will carry with you into the occupations of active life, and which will prevent even the short intervals of time which that may leave you, from being altogether lost for noble purposes. Having once conquered the first difficulties, the only ones of which the irksomeness surpasses the interest; having turned the point beyond which what was once a task becomes a pleasure; in even the busiest after-life, the higher powers of your mind will make progress imperceptibly, by the spontaneous exercise of your thoughts, and by the lessons you will know how to learn from daily experience. So, at least, it will be if in your early studies you have fixed your eyes upon the ultimate end from which those studies take their chief value — that of making you more effective combatants in the great fight which never ceases to rage between Good and Evil, and more equal to coping with the ever new problems which the changing course of human nature and human society present to be resolved. Aims like these commonly retain the footing which they have once established in the mind; and their presence in our thoughts keeps our higher faculties in exercise, and makes us consider the acquirements and powers which we store up at any time of our lives, as a mental capital, to be freely expended in helping forward any mode which presents itself of making mankind in any respect wiser or better, or placing any portion of human affairs on a more sensible and rational footing than its existing one. There is not one of us who may not qualify himself so to improve the average amount of opportunities, as to leave his fellow creatures some little the better for the use he has known how to make of his intellect. To make this little greater, let us strive to keep ourselves acquainted with the best thoughts that are brought forth by the original minds of the age; that we may know what movements stand most in need of our aid, and that, as far as depends on us, the good seed may not fall on a rock, and perish without reaching the soil in which it might have germinated and flourished. You are to be a part of the public who are to welcome, encourage, and help forward the future intellectual benefactors of humanity; and you are, if possible, to furnish your contingent to the number of those benefactors. Nor let any one be discouraged by what may seem, in moments of despondency, the lack of time and of opportunity. Those who know how to employ opportunities will often find that they can create them: and what we achieve depends less on the amount of time we possess, than on the use we make of our time. You and your like are the hope and resource of your country in the coming generation. All great things which that generation is destined to do, have to be done by some like you; several will assuredly be done by persons for whom society has done much less, to whom it has given far less preparation, than those whom I am now addressing. I do not attempt to instigate you by the prospect of direct rewards, either earthly or heavenly; the less we think about being rewarded in either way, the better for us. But there is one reward which will not fail you, and which may be called disinterested, because it is not a consequence, but is inherent in the very fact of deserving it; the deeper and more varied interest you will feel in life: which will give it tenfold its value, and a value which will last to the end. All merely personal objects grow less valuable as we advance in life: this not only endures but increases.

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